

REMARKS

This application has been carefully reviewed in light of the Office Action dated July 30, 2003 (Paper No. 3). Claims 1 to 26 and 30 are in the application, of which Claims 1, 13, 16, 19 and 30 are independent. Reconsideration and further examination are respectfully requested.

Paragraphs 1 and 2 of the Office Action indicate that formal drawings "will be required" and that there are informalities involving the drawings in the as-filed application. These paragraphs, coupled with the Office Action's lack of any reference to the contrary, together indicate that the Patent Office has not correctly processed the papers filed in this application on September 28, 2001, namely, a Preliminary Amendment and a Letter Transmitting Formal Drawings. Additional copies of these papers are enclosed. Entry of these papers is respectfully requested.

In particular, the Draftsman's review of the formal drawings is explicitly requested.

Upon further review of the specification, even in light of the Preliminary Amendment filed September 28, 2001, it appears that additional changes were needed to the specification for conformity with the drawings. Those changes have been made as indicated above.

Claims 1 to 29 were rejected under 35 U.S.C. § 103(a) over U.S. Patent 5,463,480 (MacDonald) in view of U.S. Patent 4,839,722 (Barry). In addition to these

rejections, Claims 2 to 6, 20 and 23 to 25 were rejected further in view of U.S. Patent 5,907,495 (Snyder). The rejections are respectfully traversed.

The invention herein concerns metamerism, and the metameric deficiencies of the MacDonald system are discussed explicitly in the specification commencing at page 2. As explained there, systems like MacDonald are deficient since accurate color metamerism is effected only under destination viewing conditions exactly the same as those used during inverse-transformation processing.

On the other hand, the invention is intended to achieve accurate metameric effects even under plural different viewing conditions. To achieve this advantageous effect, the invention includes the features of:

(1) the application of multiple inverse transforms to a color value, with each different inverse transform corresponding to a different viewing condition; and

(2) the calculation of a single color value that fits plural target values with acceptable error.

Thus, the invention specifically contemplates more than one inverse transform for a color value. Rather, multiple inverse transforms are applied, and the multiple inverse transforms correspond to multiple different viewing conditions. In addition, a single color value is calculated that fits plural target color values with acceptable error, such as a weighted least squared fit.

Because the invention applies multiple inverse transforms to a color value, with each different transform corresponding to a different viewing condition, and because a

single color value is calculated to fit plural color values with acceptable error, the invention obtains its intended effect of acceptable metameric results even under plural different viewing conditions.

In sharp contrast, the MacDonald system applies only a single inverse transform, and the single transform corresponds only to a single viewing condition.

The Office Action took a contrary view, and indicated (at page 3) that MacDonald's disclosure commencing at line 3 of column 2 somehow described the application of multiple inverse transforms to a color value, with each transform corresponding to a different viewing condition. That understanding of MacDonald would be inaccurate. Rather, as clearly shown in MacDonald's Figure 3B, a modified LCH image 19 is transformed at 20 with an inverse color appearance model. The inverse color appearance model is derived based on viewing conditions 21 at the viewing destination. This is explained beginning at line 27 of MacDonald's column 6:

“Firstly, the processor 2 implements an inverse color appearance model 20 responding to print viewing conditions 21 to convert the modified LCH image 19 to an XYZ image 22 stored in the store 8. The inverse color appearance model 20 is the direct inverse of the model 14 [see Figure 3A] and can be derived by reference to the textbook mentioned above.”

Thus, it is incorrect to state that MacDonald applies multiple inverse transforms corresponding to plural different viewing conditions.

It is likewise incorrect to state that MacDonald calculates a single color value that fits plural target color values with acceptable error. Rather, since MacDonald only applies a single inverse color transform to each color value, it only obtains a single

target color value, and there is no need to calculate a single value since one is already available.

In any event, the Office Action conceded that MacDonald fails to disclose calculation of a single color value that fits plural target color values with acceptable error. The Office Action relied on Barry for this feature, but it is respectfully submitted that such reliance is misplaced.

Rather, Barry describes an iterative approach for calculating a color value for storage in a look-up table. However, this color value is calculated from a single color value, and not from plural different target color values. Moreover, even if Barry disclosed plural target color values (which it does not) Barry nowhere discloses that such plural target color values are obtained by application of multiple inverse transforms corresponding to plural different viewing conditions to an original color value.

Snyder has been reviewed, but is not seen to add anything of significance to the above discussion of MacDonald and Barry.

It is therefore respectfully submitted that the claims herein define subject matter that would not have been obvious from any permissible combination of the applied art. Allowance is therefore respectfully requested.

Applicant's undersigned attorney may be reached in our Costa Mesa,
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Respectfully submitted,


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